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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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04/19/2001

Paul A. Kline

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EXAMINER

CONTEE, JOY KIMBERLY

ART UNIT	PAPER NUMBER
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2686

9

DATE MAILED: 09/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/837,972

Applicant(s)

KLINE ET AL.

Examiner

Joy K Contee

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-10 and 13-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 7-8.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-4,7 and 8 are rejected under 35 U.S.C. 102(e) as being anticipated by Cern, U.S. Patent No. 6,452,482.

Regarding claim 1, Cern discloses an interface circuit for interfacing radio frequency communications signals with a medium voltage power line, the interface circuit comprising:

a medium voltage node adapted for connection to the medium voltage power line (col. 4, lines 44-52);

a reactive element (i.e., transformer) adapted for connection to a common potential (i.e., ground) (col. 4, lines 46-52);

a metal oxide varistor connected between the medium voltage node and the reactive element, wherein the radio frequency communications signals are interfaced to the medium voltage node via the metal oxide varistor (col. 19, lines 25-33 and see Fig. 16B).

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Regarding claim 2, Cern discloses the interface circuit for interfacing, radio frequency communications signals with a medium voltage power line of claim 1, wherein the reactive element comprises: a transformer (col. 19, lines 25-28).

Regarding claim 3, Cern discloses the interface circuit for interfacing radio frequency communications signals with a medium voltage power line of claim 1, wherein the reactive element comprises: a transformer, and a conductive line (i.e., reads on neutral conductors) coupled through a ferrite bead; wherein the transformer and the conductive line are connected in parallel with one another (i.e., neutral conductors, wires are connected to a grounding post at an MV-LV distribution transformer) (col. 5, lines 16-24 and col. 11, lines 30-44).

Regarding claim 4, Cern discloses the interface circuit for interfacing radio frequency communications signals with a medium voltage power line of claim 1, wherein the radio frequency communications signals include transmitted signals, the interface circuit further comprising: a first opto coupler (i.e., reads on inductive coupler) adapted to couple in to the interface circuit the transmitted radio frequency communications signals to be interfaced via the medium voltage node (col. 13, lines 16-21).

Regarding claim 7, Cern further discloses the interface circuit for interfacing radio frequency communications signals with a medium voltage power line of claim 1, wherein the radio frequency communications signals include received signals, the interface circuit further comprising: an opto coupler (i.e., reads on capacitive coupler) adapted to

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couple out of the interface circuit the received radio frequency communications signals interfaced via the medium voltage node (col. 13, lines 21-35).

Regarding claim 8, Cern discloses the interface circuit for interfacing radio frequency communications signals with a medium voltage power line of claim 1, wherein the common potential comprises ground (col. 5, lines 21-23).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9 -10 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cern, in view of Geissler, U.S. Patent No. 4,004,257.

Regarding claim 9, Cern discloses an interface circuit for interfacing radio frequency communications signals with a medium voltage power line, the interface circuit comprising:

a medium voltage node adapted for connection to the medium voltage power line (col. 4, lines 45-52);

a conductive line (i.e., reads on neutral wires, conductors) and being adapted for connection to a common potential (i.e., ground) (col. 5, lines 16-23),

and a metal oxide varistor connected between the medium voltage node and the conductive line, wherein the radio frequency communications signals are interfaced to the medium voltage node via the metal oxide varistor (col. 19, lines 25-33).

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Cern does not explicitly disclose the conductive having a selected length the selected length being one quarter of the wavelength of the radio frequency communications signals.

In a similar field of endeavor, Geissler discloses in a coaxial line a conductive member having the length of one quarter of the wavelength of the radio frequency communications signals (col. 7, lines 37-53).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Cern to include a conductive line having the length $\frac{1}{4}$ lambda for the purpose of filtering out frequencies having the wavelength lambda.

Regarding claim 10, Cern as modified by Geissler discloses the interface circuit for interfacing radio frequency communications signals with a medium voltage power line of claim 9, wherein the radio frequency communications signals include transmitted signals, the interface circuit further comprising: a first opto coupler (i.e., reads on inductive coupler) adapted to couple in to the interface circuit the transmitted radio frequency communications signals to be interfaced via the medium voltage node (see Cern, col. 13, lines 16-21).

Regarding claim 13, Cern as modified by Geissler discloses the interface circuit for interfacing radio frequency communications signals with a medium voltage power line of claim 9, wherein the radio frequency communications signals include received signals, the interface circuit further comprising: an opto coupler (i.e., reads on capacitive coupler) adapted to couple out of the interface circuit the received radio frequency

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communications signals interfaced via the medium voltage node (see Cern, col. 13, lines 21-35).

Regarding claims 14, Cern as modified by Geissler discloses the interface circuit for interfacing radio frequency communications signals with a medium voltage power line of claim 9, wherein the common potential comprises ground (see Cern, col. 5, lines 21-23).

5. Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pilloud, U.S. Patent No. 4,504,705, in view of Cern.

Regarding claim 15, Pilloud discloses a method for receiving a digital signal from a power line carrying both the digital signal and a power line voltage waveform, wherein the digital signal is modulated by an RF carrier and the power line voltage waveform is in the 50-60 Hz band (i.e., 50 Hz), comprising receiving the digital signal through a high pass filter while blocking or attenuating the power line voltage (col. 1, lines 55-62 and col. 4, line 65 to col. 5, line 4).

Pilloud fails to explicitly show wherein the high pass filter comprises a metal oxide varistor (MOV).

In a similar field of endeavor, Cern discloses wherein the high pass filter comprises a metal oxide varistor (MOV) (col. 9, lines 25-33).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Pilloud to include a high pass filter such as an MOV for the purpose of providing protection for the devices connected to the MV lines.

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Regarding claim 16, Pilloud as modified by Cern discloses the method for receiving a digital signal from a power line of claim 15, wherein the high pass filter further comprises a reactive element connected between the MOV and a common potential (see Cern, col. 19, lines 25-33).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Pilloud to include a high pass filter such as an MOV for the purpose of providing protection for the devices connected to the MV lines.

6. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pilloud as modified by Cern, in further view of Geissler.

Regarding claim 17, Pilloud as modified by Cern discloses the method for receiving a digital signal from a power line of claim 15, but fails to explicitly show wherein the high pass filter further comprises a selected length conductive line connected between the MOV and a common potential, the selected length being one quarter of the wavelength of the RF carrier.

In a similar field of endeavor, Geissler discloses in a coaxial line a conductive member having the length of one quarter of the wavelength of the radio frequency communications signals (col. 7, lines 37-53).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify Pilloud as modified Cern to include a conductive line having the length $\frac{1}{4}$ lambda for the purpose of filtering out frequencies having the wavelength lambda.

Allowable Subject Matter

7. Claims 5- 6 and 11-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims

The following is a statement of reasons for the indication of allowable subject matter: prior art of record fails to explicitly show: a second opto coupler adapted to couple out of the interface circuit the received radio frequency communications signals interfaced via the medium voltage node; and a radio frequency combiner that is connected to the reactive element, and connected to the first opto coupler so as to make the transmitted radio frequency communication signals available to the medium voltage node via the metal oxide varistor, and connected to the second opto coupler so as to make the received radio frequency communications signals available from the medium voltage node via the metal oxide varistor.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Rickard, U.S. Patent No. 6, 785,532, discloses power line communications.

Kline, U.S. Patent No. 5,937,342, discloses a wireless local distribution system using standard power lines.

Carlson, U.S. Patent No. 6,121,765, discloses an isolated electrical power supply.

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Shpater, U.S. Patent No. 5,751,803, discloses a telephone line coupler.

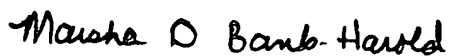
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joy K Contee whose telephone number is 703-308-0149. The examiner can normally be reached on M (alternating), T & Th, 5:30 a.m. to 2:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marsha Banks-Harold can be reached on 703-305-4379. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Joy Contee

September 22, 2004


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